



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA ST., N.W., SUITE 3100
 ATLANTA, GEORGIA 30303

Report Nos. 50-369/82-42 and 50-370/82-37

Licensee: Duke Power Company
 422 South Church Street
 Charlotte, NC 28242

Facility Name: McGuire Nuclear Station

Docket Nos. 50-369 and 50-370

License Nos. NPF-9 and CPPR-84

Inspection at McGuire site near Charlotte, NC, and Duke Power Company design office at Charlotte, NC

Inspector: W. P. Ang 12-1-82
Date Signed

Approved by: J. J. Blake 12/2/82
Date Signed
 J. J. Blake, Section Chief
 Engineering Inspection Branch
 Division of Engineering and Technical Programs

SUMMARY

Inspection on November 16-19, 1982

Areas Inspected

This routine, unannounced inspection involved twenty-five inspector-hours on site and at the Duke Power Company design offices in the areas of pipe support baseplate designs using concrete expansion anchors (IEB-79-02-Unit 2); seismic analysis for as-built safety-related piping systems (IEB-79-14-Unit 2); and Preliminary Licensee Event Report Number 82-94 Containment Spray Heat Exchanger Foundation Discrepancies (Unit 1).

Results

Of the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

S. B. Hager, Chief Engineer, Civil Engineering Division
G. Greer, QA Manager
*M. S. Starnes, Senior Construction Engineer
J. T. Moore, Project Manager
*E. B. Miller, Senior QA Engineer (Unit 2)
D. L. Rehn, Principal Engineer, CE/Structural Analysis
B. L. Peele, Senior Engineer, Design Engineering
*E. M. Couch, Construction Engineer, Mechanical
*R. D. Ruth, Senior QA Engineer (Unit 1)
*D. Mendezoff, Licensing Engineer (Unit 1)
J. H. Underwood, Supervising Design Engineer
J. B. Swords, Supervising Design Engineer

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 19, 1982, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the inspection findings with no dissenting comment.

Inspector Follow-up Item 370/82-37-01, Refueling Water System Diagram Clarification

Inspector Follow-up Item 370/82-37-02, Inspection for Clearances and Interferences

Inspector Follow-up Item 370/81-37-03, Piping Walkdown Records Clarification

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Pipe Support Baseplate Designs Using Concrete Expansion Anchors (IEB 79-02, Unit 2)

On May 21, 1982, the licensee submitted its final response to IEB 79-02 for Unit 2. An inspection was performed onsite and at the Duke Power Company design offices to verify licensee compliance with IEB 79-02 requirements and licensee commitments. Design calculations for the concrete expansion anchors of the following pipe supports were inspected:

- 2 MCV-FW-5047 - Refueling Water System
- 2 MCV-FW-5049 - Refueling Water System
- 2 MCV-FW-5050 - Refueling Water System
- 2 MCV-FW-5055 - Refueling Water System
- 2 MCV-ND-5401 - Decay Heat Removal System

In addition, the concrete expansion anchor installation for pipe supports 2MCV-FW-5050 and 2MCA-ND-5401 was inspected. Pending licensee completion of IEB No. 79-02 requirements and commitments and further NRC inspection, the bulletin was left open.

No violations or deviations were identified.

6. Seismic Analysis For As-Built Safety-Related Piping Systems (IEB 79-14 Unit 2)

On August 5, 1982, the licensee submitted its final response to IEB 79-14. An inspection was performed onsite and at the Duke Power Company Design Offices to verify licensee compliance with IEB 79-14 requirements and licensee commitments.

The Refueling Water piping system from the Refueling Water Storage Tank to the RHR pumps was selected and inspected. Specifically, piping stress analysis and pipe support calculations for the following pipe supports were inspected. Portions of the installed piping and pipe supports were also inspected. The licensee's M8 piping walkdown inspection and M15 hanger inspection records were also reviewed.

- a. Piping Analysis Math Model FW-353 Revision 9-RWST to Auxilliary Building Wall
 - (1) Pipe Support 2 MCV-FW-5047
 - (2) Pipe Support 2 MCV-FW-5049
 - (3) Pipe Support 2 MCV-FW-5050
 - (4) Pipe Support 2 MCV-FW-5055
- b. Piping Analysis Math Model FW-350 Revision 2-Auxilliary Building to RHR Pumps
 - (1) Pipe Support 2MCA-ND-5401
 - (2) Pipe Support 2MCA-ND-5402

A comparison of the field installation, the piping drawings, the math model, and the flow diagram (DWG MC-1571-1.0 Revision 9) for the Refueling Water System, revealed that the flow diagram showed an expansion joint on the 24 inch tank discharge piping downstream of a 4 inch tank drain line. All other drawings show the expansion joint, as installed, upstream of the 4 inch drain line. The licensee agreed that the flow diagram required clarification. Pending licensee clarification of the flow diagram, this item was identified as Inspector Followup Item 370/82-37-01-Clarification of Refueling Water System flow diagram.

During the inspection it was noted that relatively brittle fire wall material had been installed around pipe support 2 MCV-FW-5049. The licensee's design engineers determined the condition to be technically acceptable subsequent to the inspection. The licensee further indicated that an inspection for clearances and interferences was already part of their IEB 79-14 program. Pending NRC inspection of the licensee's clearance and interference inspectors, this item was identified as inspector followup item 370/82-37-02, Inspection for Clearances and Interferences.

A review of the M8 walkdown inspection records for math model FW-350 revealed that revisions 6, 9, and 13 of the applicable piping drawings had been used for the inspection. A 6" discrepancy in the length of horizontal member no. 422, at elevation 721, was identified originally by QC. However, subsequent revisions to the drawings did not reflect the entire discrepancy. Further inspection for clarification of the dimensional discrepancy and corresponding drawing revisions were not completed during the inspection. Pending further NRC review of the noted drawing revisions, this item was identified as Inspector Followup Item 370/82-37-03, Piping Walkdown Records Clarification.

Pending licensee completion of IEB 79-14 Requirements and Commitments, and further NRC inspection, the bulletin was left open.

No violations or deviations were identified.

7. (Open) Preliminary Licensee Event Report 82-94 - Containment Spray Heat Exchanger Foundation, Unit 1

On November 8, 1982, the licensee reported that both trains of the Containment Spray System were inoperable due to improper welds on both Heat Exchanger supports. Subsequently, Design Engineering provided repair instructions. The Containment Spray Heat Exchanger foundations were repaired and subsequently declared operable by the licensee. The preliminary licensee event report and corrective action were discussed with the licensee's QA manager and Chief Civil Design Engineer. During subsequent QA/QC inspection of the foundation additional discrepancies had been identified but determined to be technically acceptable. During construction, "I" beams for the foundations were notched to allow installation of anchor bolts. Subsequent Design Engineering corrective action required installation of backing plates on the notches. In 4 cases the backing plates had not been installed. In one case, an unreported notch was also identified. In addition, one missing weld length was also identified. However, equipment loads had been reduced after reanalysis and the existing conditions noted were determined to be technically acceptable. A review of the licensee's design evaluation calculations confirmed the licensee's conclusions.

The licensee had not submitted its final report on the above noted discrepancies. Further discussions were held with the QA manager and the Chief Civil Design Engineer regarding the potential generic implications of the discrepancies. They stated that they were looking into the generic consideration for both the Design Engineering discrepancy and the construction QA/QC aspect. This information would be provided on the final report. Pending further licensee evaluation, corrective action, and submittal of a final report, this item shall remain open.

No violations or deviations were identified.